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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,212	09/30/2003	Roy E. Scheuerlein	023-0024	9946

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EXAMINER

HO, HOAI V

ART UNIT PAPER NUMBER

2827

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

57

Office Action Summary	Application No.	Applicant(s)	
	10/675,212	SCHEUERLEIN ET AL.	
	Examiner	Art Unit	
	Hoai V. Ho	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 26-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This office action is responsive to communication(s) filed on October 27, 2005.
2. Claims 1-24 and 26-56 are presented for examination.

Claim Rejections - 35 USC 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, lines 2 and 3, a newly added words “independently selectable” in a phrase “a first plurality of independently selectable X-lines configured to be simultaneously selected in a read mode of operation” not described in the specification.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

“Independently selectable” in a phrase “a first plurality of independently selectable X-lines configured to be simultaneously selected in a read mode of operation” of claim 1, lines 2 and 3 is unclear and confusing because “independently selectable” is contrary to “simultaneously” as shown in claim 1, lines 2 and 3 above.

Claims 2-14 and 26-28 are rejected due to the rejections of the parent claim.

The response has been reviewed but has not been found persuasive as to error in the rejections. Therefore, claims 1-24 and 26-56 are still rejected for the same reason as set forth in the previous Office action in Paper No. 0705 as follows:

Claim Rejections - 35 USC 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 8, 9, 13, 14, 18-24, 26-30, 32-33, 37-38, 40-43, 46, 50-53 and 56 are rejected under 35 U.S.C. 102(a) as being anticipated by La Rosa U. S. Patent No. 6738286.

As per claims 1, 8, 13, 14, 18, 27-30, 37-38, 40, 41, 46, 50, 51 and 56, Figures 3, 4 and 6 of La Rosa are directed to a non-volatile memory cell array comprising within a first array block (COL0) a first plurality of ‘independently selectable’ (Tables 2-5 from col. 6 for erasing and writing only) X-lines (WL_m and WL_{m+1}) configured to be simultaneously selected in a read mode of operation (col. 6, lines 9-19), and each associated with a first Y-lines group (BL0 to BL4) numbering at least one Y-line.

As per claims 2, Figure 3 of La Rosa discloses wherein each of the first plurality of X-line is also associated with a second Y-line group (BL5 to BL 7) numbering at least one Y-line.

As per claim 9, Table 4 of La Rosa discloses wherein each of the first plurality of X-lines is configured to be individually selected in a write mode operation.

As per claims 19-24, 42 and 43, Figure 6 of La Rosa discloses further comprising a second in claims 19 and 42, or third in claims 20 and 43, plurality of X-lines (WL_m , WL_m , WL_{m+1} and WL_{m+1}) configured to be simultaneously selected in a read mode of operation (col. 6, lines 9-19), and each associated with the first Y-lines.

As per claims 32, 33, 52 and 53, Figure 6 of La Rosa discloses programming more than one cell associated with an X-line by simultaneously activating at least two Y-line groups (col. 8, lines 13-15).

8. Claims 1-5, 8, 13, 14, 18, 27-30, 32-33, 38, 40, 41, 46, 50-53 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Zink et al. U. S. Patent No. 5946241 (PTO-892 mailed date 1004).

As per claims 1, 8, 13, 14, 18, 27-30, 38, 40, 41, 46, 50, 51 and 56, Figures 3 and 4 of Zink are directed to a non-volatile memory cell array comprising within a first array block (COL_0) a first plurality of 'independently selectable' (col. 5, lines 15-21 for erasing and writing only) X-lines (LM_j s) configured to be simultaneously selected in a read mode of operation, and each associated with a first Y-lines group (BL_0 to BL_7) numbering at least one Y-line.

As per claim 2, Figure 3 of La Zink discloses wherein each of the first plurality of X-line is also associated with a second Y-line group (BL_0 to BL_7) numbering at least one Y-line.

As per claims 3-5, Figure 3 and col. 2, line 58-62 and col. 3, line 58-67 of Zink disclose wherein the first (BL_0) and second Y-line (BL_0) groups are simultaneously selectable in a read mode and are respectively coupled to true and complement inputs of a sense amplifier circuit (fig. 4).

As per claims 32, 33, 52 and 53, Figure 3 of Zink discloses programming more than one cell associated with an X-line by simultaneously activating at least two Y-line groups.

Claim Rejections - 35 USC 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-12, 14-17, 26, 31, 34-36, 44, 45, 47-49, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Rose U. S. Patent No. 6738286 or Zink et al. U. S. Patent No. 5946241.

As per claims 10-12, 26, 31, 34-36, 44, 45, 54 and 55, La Rose and Zink disclose all the subject matter claimed except for the memory comprises different types of non-volatile memories such as passive element, anti-fuse, magnetoresistive or write-once memory cells, or content addressable memory array. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify La Rose and Zink' non-volatile EEPROM with the different types of non-volatile memories as the claimed invention since they have the same purpose and advantages to retain recorded information even when the power to the memory is turned off and since it has been held that constructing a memory structure in various elements involves only routine skill in the art (see Zink col. 6, lines 24-32).

As per claims 14-17 and 47-49, La Rose and Zink disclose all the subject matter claimed except for the memory comprises different dimensional memory array and disposal one or more layers of the memory. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify La Rose and Zink' memory array with the different dimensional memory array and disposal one or more layers of the memory array as the claimed invention, since it has been held that constructing a formerly memory array in various dimensions and layers involves only routine skill in the art (see Zink col. 6, lines 24-32).

Response to Arguments

11. Applicants' arguments have been fully considered but they are not persuasive.

Applicants argue that:

(1) (Regarding claims 1 and 2) "La Rose, it is clear that the word lines WL_m and WL_{m+1} are not *both* associated with the bit lines BL0-BL4, nor are they *both* associated with the bit lines BL5-BL7." The Examiner disagrees with this argument. Because the claimed invention recites that each X-line associated with a first Y-lines group (see claim 1). La Rose, starting at column 5, line 62 to column 6, line 7 and Fig. 4, discloses that each X-line associates a group of Y-lines. For example, a X-line WL_m associates with a Y-lines group, BL5 to BL7, and another WL_{m+1} associates with another Y-lines group, BL0 to BL4 for claim 2. Similarly, Fig. 3 of Zink discloses that the upper X-line LM_j associates with a Y-lines group, LB'_0 to LB'_7 , and another the lower X-line LM_j associates with a Y-lines group, LB_0 to LB_7 for claim 2.

(2) (Regarding claims 28, 29 and 51) "Nowhere is an aggregate memory cell current described during a read operation." The Examiner disagrees with this argument. La Rose starts at column 1, lines 51 to 61 and column 6, lines 33 and 34 disclosing "the parameters that can be

adjusted due to the configuration bits are quite varied and include the following... the level of a gate control voltage during the reading phases; the number of current generators activated in the sense amplifiers; current adjustment in the current generators” as the claimed invention.

Similarly, Fig. 4 and claim 14 of Zink disclose an aggregate memory cell current described during a read operation.

(3) (Regarding claims 19-24, 42 and 43), “There is no second or third plurality of word lines disclosed that are simultaneously selected in read mode of operation, let alone that are also each associated with the first Y-lines group.” Figure 4 of La Rose only discloses a pair (WL_m and WL_{m+1}) of word lines for a column 0 (COL_0). However, Figure 3 of La Rose shows more pairs (WL_0 to WL_{m+1}) of word lines and more columns (COL_0 to COL_{n-1}).

For the above reasons, it is believed that the rejections should be sustained. Feature of an invention not found in the claims can be given no patentable weight in distinguishing the claimed invention over the prior art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2827

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai V. Ho whose telephone number is (571) 272-1777. The examiner can normally be reached on 7:00 AM -- 5:30 PM from Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



hvh
November 30, 2005



Hoai V. Ho
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